CLAIMS

No claims have been amended by this paper. No claims have been cancelled by this paper. The claims in their present form are as follows:

1. (Previously Presented) A computer-implemented method for determining at least one effect of an agent staffing plan for a long-range period that is more than a month in the future, comprising:

receiving a definition for each of a plurality of agent profiles comprising a group of agents that have similar characteristics, and wherein the definition includes the similar characteristics, including at least one skill, at least one performance measure, and at least one attribute specifying an amount of change in the number of agents in the group during a specified time period, wherein there is an available work associated with each agent in each of the agent profiles;

defining at least one work load;

specifying at least one criteria to be satisfied by a long-range staffing plan, wherein the plan covers a period that is more than a month in the future; and

calculating at least one effect of applying the plurality of agent profiles to the at least one work load while satisfying the at least one criteria, wherein the calculated effect includes at least one performance measure for the at least one work load,

wherein the calculating comprises:

adding a first agent from one of the agent profiles to a proposed schedule, wherein the proposed schedule is for servicing the at least one work load over a predefined time period;

calculating an effect of adding the first agent as if the first agent is the only agent being added, wherein adding the first agent includes distributing the available work associated with the first agent among the at least one work load;

adding another agent from one of the agent profiles to the proposed schedule;

calculating an effect of adding the another agent as if the another agent is the only agent that will be added; and

iteratively adding additional other agents from the agent profiles to the proposed schedule and iteratively calculating the effects of adding the additional other agents until the available work for every agent in the plurality of agent profiles has been distributed.

2. (Previously Presented) The method of claim 1, wherein the complex system is a contact center, the at least one work load includes at least one queue, and wherein the at least one capability includes a skill set.

3. (Previously Presented)) The method of claim 2, wherein the at least one performance measure includes an efficiency percentage, and wherein applying the plurality of agent profiles to the at least one work load includes staffing the at least one queue with the at least one agent profile.

4-6. (Cancelled)

7. (Previously Presented)   The method of claim 3, wherein the characteristics further include:

shrinkage, wherein shrinkage comprises various categories of time for which an employee is paid, but during which the agent does not work;

burden, wherein burden comprises various categories of expenses associated with the agent including benefit expenses; and

wage.

8. (Previously Presented)   The method of claim 3, wherein specifying characteristics further comprises specifying whether the profile may be hired into, and a time period required to bring an agent hired into the profile to a predefined level of efficiency.

9. (Previously Presented)   The method of claim 3, further comprising displaying the calculated effect of the long-range staffing plan, comprising displaying for each queue of the at least one queue for each of a plurality of predefined time periods:

a contact volume;

a predefined average handling time goal;

an actual service level; and

a required service level.

10-12. (Cancelled)

13. (Previously Presented)   The method of claim 1, wherein the calculated effect further includes an estimated cost of the long-range staffing plan, and wherein the estimated cost of the long-range staffing plan includes a training cost that reflects a period of time required for an employee to reach a predefined level of performance.

14. (Previously Presented)   The method of claim 1, wherein the contact center comprises multiple queues and multiple types of contact media, wherein the skill set includes skills across multiple queues and multiple contact media.

15. (Previously Presented)   The method of claim 14, wherein iteratively calculating the effects of adding the additional other agents includes assigning additional other agents across multiple queues and multiple contact media.

16. (Previously Presented)   A system for determining at least one effect of an agent staffing plan for a long-range period that is more than a month in the future, wherein the multi-contact center processes a plurality of contact queues comprising a plurality of contact media, the system comprising:

at least one server comprising at least one storage device; and

at least one client processor coupled to the server through a network, wherein the client processor is coupled to a plurality of storage devices, including a storage device that stores instructions that, when executed, cause the at least one client processor to,

receive a definition of at least one employee profile, wherein an employee profile comprises a group of employees that have similar characteristics, wherein the

characteristics include a skill set and an efficiency percentage, and at least one attribute specifying a change in the number of employees in the group during a specified time period;

receive a definition of at least one queue, wherein the at least one queue handles a plurality of contacts through a plurality of contact media;

receiving a specification of at least one criteria to be satisfied by a long-range staffing plan, wherein the plan covers a period that is more than a month in the future; and

calculating at least one effect of staffing the at least one queue with the at least one employee profile while satisfying the at least one criteria, wherein the calculated effect includes a service level for the at least one queue,

wherein the calculating comprises:

adding a first employee from the at least one profile to a proposed schedule, wherein the proposed schedule is for servicing the at lease one queue over a predefined time period;

calculating an effect of adding the first employee while considering the first employee to be the only employee from the at least one profile that is added, wherein adding the first employee includes distributing the available work associated with the first employee among the at least one queue;

adding another employee from the at least one profile to the proposed schedule;

calculating an effect of adding the another employee as if the another employee is the only agent that will be added; and

iteratively adding additional employees from the at least one profile to the proposed schedule and iteratively calculating effects of adding the additional employees while considering each additional employee as if that additional employee is the only employee that will be added until available work for every employee from the at least one profile has been distributed.

17. (Original) The system of claim 16, wherein the calculated effect further includes a queue occupancy for each queue, and an estimated cost of the long-range staffing plan.

18-19. (Cancelled)

20. (Original) The system of claim 16, wherein the characteristics further include:

shrinkage, wherein shrinkage comprises various categories of time for which an employee is paid, but during which the employee does not work;

burden, wherein burden comprises various categories of expenses associated with the employee, including benefit expenses; and

wage.

21. (Previously Presented) The system of claim 16, wherein the characteristics further include whether the profile may be hired into, and a time period required to bring an employee hired into the profile to a predefined level of efficiency.

22. (Previously Presented)   The system of claim 16, wherein the instructions, when executed, further cause the at least one client processor to display the calculated effect of the long-range staffing plan, comprising displaying for each queue of the at least one queue for each of a plurality of predefined time periods:

a contact volume;

a predefined average handling time goal;

an actual service level; and

a required service level.

23-25. (Cancelled)

26. (Original) The system of claim 17, wherein the estimated cost of the long-range staffing plan includes a training cost that reflects a period of time required for an employee to reach a predefined level of performance.

27. (Previously Presented)   The system of claim 16, wherein iteratively calculating effects of adding the additional employees added includes assigning additional employees across multiple queues and multiple contact media.

28-29. (Cancelled)

30. (Previously Presented)   An electromagnetic medium containing executable instructions which, when executed in a processing system, cause the system to generate effects of a proposed long-range staffing plan for a long-range period that is more than a month in the future, wherein generating comprises:

defining at least one employee profile, wherein an employee profile comprises a group of employees that have the same skills, and wherein defining comprises specifying characteristics, including a skill set, an efficiency percentage, and at least one attribute specifying a change in the number of employees in the group during a specified time period;

defining at least one queue;

specifying at least one criteria to be satisfied by a long-range staffing plan; and

calculating at least one effect of staffing the at least one queue with the at least one employee profile while satisfying the at least one criteria, wherein the calculated effect includes a service level for the at least one queue, wherein the calculating comprises:

adding a first employee from the at least one profile to a proposed schedule, wherein the proposed schedule is for servicing the at least one queue over a predefined time period, wherein adding the first employee includes distributing available work associated with the first employee among the at least one queue;

calculating an effect of adding the first employee, while considering the addition of the first employee to be independent of adding any other employees from the at least one profile;

adding another employee from the at least one profile to the proposed

schedule;

calculating an effect of adding the another employee taking into account the effect of having added the first employee; and

iteratively adding additional employees from the at least one profile to the proposed schedule and iteratively calculating effects of adding the additional employees while considering the addition of each additional employee to be independent of adding any other employees from the at least one profile until available work for every employee from the at least one profile has been distributed.

31. (Original) The electromagnetic medium of claim 30, wherein the calculated effect further includes a queue occupancy for each queue, and an estimated cost of the long-range staffing plan.

32. (Cancelled)

33. (Previously Presented)   The electromagnetic medium of claim 30, wherein calculating the effect of adding the another employee includes redistributing available work among the at least one queue, and recalculating a workload remaining.

34. (Original) The electromagnetic medium of claim 30, wherein the characteristics further include:

shrinkage, wherein shrinkage comprises various categories of time for which an employee is paid, but during which the employee does not work;

burden, wherein burden comprises various categories of expenses associated with the employee, including benefit expenses; and

wage.

35. (Original) The electromagnetic medium of claim 30, wherein specifying characteristics further comprises specifying whether a profile may be hired into, and a time period required to bring an employee hired into the profile to a predefined level of efficiency.

36. (Previously Presented) The electromagnetic medium of claim 30, further comprising displaying the calculated effect of the long-range staffing plan, comprising displaying for each queue of the at least one queue for each of a plurality of predefined time periods:

a contact volume;

a predefined average handling time goal;

an actual service level; and

a required service level.

37-39. (Cancelled)

40. (Original) The electromagnetic medium of claim 31, wherein the estimated cost of the long-range staffing plan includes a training cost that reflects a period of time required for an employee to reach a predefined level of performance.

41. (Original) The electromagnetic medium of claim 30, wherein the contact center comprises multiple queues and multiple types of contact media, wherein the skill set includes skills across multiple queues and multiple contact media.

42. (Previously Presented) The electromagnetic medium of claim 41, wherein iteratively calculating effects of adding the additional employees includes assigning additional employees across multiple queues and multiple contact media.

43. (Previously Presented) The method of claim 1, wherein the at least one workload comprises a plurality of queues, wherein each queue is associated with a remaining load and a net staffing, wherein each agent profile is associated with a plurality of Erlang-by-queue factors, and wherein the calculating further comprises:

redistributing work among the agent profiles by computing the plurality of Erlang-by-queue factors for each agent profile;

recalculating load remaining for each of the plurality of queues by computing the net staffing and remaining load associated with each queue; and

repeating the redistributing work and recalculating load steps until the available work of agents in all agent profiles has been distributed.

44. (Previously Presented)   The method of 43, wherein each agent profile further is associated with a headcount, an hours-per-month, a number of queues worked by the profile, a total effective Erlangs performed by one agent in the agent profile, and wherein the redistributing work step further comprises:

redistributing work among the agent profiles by computing the plurality of Erlang-by-queue factors for each agent profile based on the associated headcount, the hours-per-month, the number of queues worked by the profile, and the total effective Erlangs.

45. (Previously Presented)   The method of 44, wherein each queue is further associated with a bunching variable, wherein each profile is further associated with a plurality of queue scaling factors, and computing the plurality of Erlang-by-queue factors for each agent profile further comprises:

computing each queue scaling factor based on the corresponding queue bunching variable, the corresponding queue remaining load, and a previous scaling factor;

computing an Erlangs-to-Contribute for the agent profile based on the associated agent profile headcount, hours-per-month, and number of queues worked by the profile; and

computing each of the plurality of Erlang-by-queue factors by multiplying the corresponding queue scaling factor by the computed Erlangs-to-contribute.

46. (Previously Presented)   The method of 43, wherein each queue is further associated with an expected service level, a call volume, an average handle time, a remaining load and a net staffing, and wherein the recalculating load step further comprises:

recalculating load remaining for each of the plurality of queues by computing the net staffing and remaining load associated with each queue, wherein the net staffing is produced by summing across all profiles the Erlang-by-queue factor of the queue being computed, and wherein the remaining load is based on the queue call volume, the queue average handle time, and the queue expected service level.

47. (Previously Presented)   The method of 46, wherein the recalculating load step further comprises:

calculating the queue expected service level based on the queue net staffing, the queue average handle time, a queue call rate, and a queue goal-seconds.

48. (Previously Presented)   The method of 43, wherein each queue is associated with an occupancy, wherein agent profile is further associated with a load and an hours-per-month, and further comprising the step of:

initializing each agent profile load to zero;

for each agent profile, iterating through each queue for which the profile is set to answer and adding to the agent profile load the remaining load associated with the iterated queue, multiplied by a percentage of the net staffing associated with the iterated queue to which the agent profile contributes; and

for each agent profile, computing the agent profile occupancy by dividing the agent profile load by the agent profile headcount multiplied by the agent profile hours-per-month.

49. (Previously Presented)   The method of 48, further comprising the step of:

computing an occupancy for each queue by dividing queue remaining load by queue net staffing; and

for each agent profile, bounding the agent profile occupancy by the highest value of queue occupancy in the plurality of queues.

50. (Previously Presented)   The method of claim 1, wherein the at least one attribute specifies the number of expected agent hires in the long-range period.

51. (Previously Presented)   The method of claim 1, wherein the at least one attribute specifies the expected agent attrition in the long-range period.

52. (Previously Presented)   The method of claim 1, wherein the at least one attribute specifies the expected number of agents leaving one agent profile to be trained in another agent profile.

53. (Previously Presented)   The system of claim 16, wherein calculating an effect of adding the first employee further comprises calculating the effect of adding the first employee independent of adding any other employees, and wherein calculating an effect of adding the another employee further comprises calculating the effect of adding the another employee independent of adding any other employees.

54. (Cancelled)

55. (Previously Presented)   The system of claim 16, wherein the at least one attribute specifies the number of expected employee hires in the long-range period.

56. (Previously Presented)   The system of claim 16, wherein the at least one attribute specifies the expected employee attrition in the long-range period.

57. (Previously Presented)   The system of claim 16, wherein the at least one attribute specifies the expected number of employees leaving one employee profile to be trained in another employee profile.

58. (Previously Presented)   The electromagnetic medium of claim 30, wherein the at least one attribute specifies the expected employee attrition in the long-range period.

59. (Previously Presented)   The electromagnetic medium of claim 30, wherein the at least one attribute specifies the expected number of employees leaving one employee profile to be trained in another employee profile.